Please amend the above-identified application as follows:

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously presented) A method for the treatment of hair, comprising

applying a composition onto hair, wherein the composition comprises at least one active agent, selected among compounds, which are, alone or in combination with further compounds, capable, after application to hair and after carrying out hair treatment described in the following, to provide a shape memory effect;

previously, at the same time or subsequent to the application of the composition, bringing the hair into a desired shape (permanent memory shape) and

fixing the memory shape subsequently by inducing a chemical or physical change of the applied agents;

wherein, after a desired or undesired deformation of the memory shape, the initial memory shape can be substantially recovered by means of a physical stimulation.

2. (Withdrawn) A method for hair treatment according to claim 1, wherein

the composition comprises at least one cross-linkable macromer, which forms after crosslinking a shape-memory polymer, wherein the macromer

a) comprises cross-linkable segments, which are cross-linkable by means of chemical bonds, and

b) thermoplastic segments, which are not chemically cross-linkable,

wherein the step of fixing the memory shape is achieved by means of chemical cross-linking of the macromer in order to form the shape-memory polymer, and wherein the shape-memory polymer possesses at least one transition temperature T_{trans}.

3. (Currently amended) A method for hair treatment, wherein

a hairdo (permanent shape) programmed in accordance with the method according to claim 1 is heated to a temperature above T_{trans}, which is a transition temperature for a shape-memory polymer,

the hair is brought into a second (temporary) shape, and

the second shape is fixed by means of cooling to a temperature below T_{trans}.

4. (Previously presented) A method in accordance with claim 1, wherein the composition comprises at least one cross-linkable macromer, which forms after crosslinking a shape-memory polymer, and wherein the cross-linkable macromer is selected among compounds having the general formula

$$A1\text{-}(X)_n\text{-}A2 \quad (I)$$

wherein A1 and A2 represent a reactive, chemically cross-linkable group and wherein $-(X)_n-$ represents a divalent, thermoplastic polymer segment or oligomer segment.

5. (Previously presented) A method according to claim 4, wherein the cross-linkable macromer is selected from polyesters, oligoesters, polyalkylene-glycols, oligoalkylene-glycols, polyalkylene carbonates and oligoalkylene carbonates substituted with at least two acrylate groups or methacrylate groups.

6. (Previously presented) A method in accordance with claim 5, wherein the cross-linkable macromer is selected among poly(ε-caprolactone)-dimethacrylate, poly(DL-lactide)-dimethacrylate, poly(L-lactide-co-glycolide)-dimethacrylate, poly(ethylene-glycol)dimethacrylate, poly(propylene-glycol)dimethacrylate, PEG-block-PPG-block-PEG-dimethacrylate, poly(ethyleneadipate)-dimethacrylate and hexamethylenecarbonatedimethacrylate.

7. (Previously presented) A method in accordance with claim 1, wherein the composition comprises in addition a macromer having only one chemically reactive group, provided at

the terminal or at a side chain.

8. (Previously presented) A method in accordance with claim 7, characterized in that the additional macromer is selected among compounds of the following general formula

$$R\text{-}(X')_n\text{-}A3$$

wherein R represents a monovalent organic residue, A3 represents a reactive, chemically cross-linkable group and wherein $-(X')_n-$ represents a divalent, thermoplastic polymer segment or oligomer segment.

9. (Previously presented) A method in accordance with claim 8, wherein the additional macromer is selected among polyalkylene-glycols substituted with one acrylate group or methacrylate group and monoalkylethers thereof as well as block copolymers thereof.

10. (Currently amended) A method in accordance with claim 9, wherein the additional macromer substituted with only one chemically reactive group is selected among ~~poly(ethylene-glycols)monoacrylate~~ poly(ethylene-glycol)monoacrylate, poly(propylene-glycol)monoacrylate and ~~monalkylethers~~ monoalkylethers thereof.

11. (Withdrawn) A method in accordance with claim 1, wherein the composition comprises at least two active agents, which alone show no or only weak shape memory properties, but which, after combined application to hair provide a synergistically increased shape memory effect.

12. (Withdrawn) A method according to claim 1, wherein the composition comprises at least one shape memory polymer, which comprises

a) at least one hard segment which can be crosslinked by means of physical interactions, having a first transition temperature T'_{trans}, which lies above room temperature, and

b) at least one soft segment having a second transition temperature T_{trans} which lies below T'_{trans}, and

wherein the memory shape is fixed by means of a physical crosslinking of the at least one shape memory polymer.

13. (Withdrawn) A method according to claim 12, wherein shaping of the hairs occurs under warming to a temperature of at least T'_{trans} and wherein subsequent fixation of the hairdo occurs by means of cooling to a temperature below T'_{trans}.

14. (Withdrawn) A method for hair treatment, wherein

a programmed hairdo (permanent shape) obtained in accordance with a method according to claim 12, is warmed to a temperature between T'_{trans} and T_{trans},

wherein the hair is then brought into a second (temporary) shape and

wherein the second shape is fixed by means of cooling to a temperature below T_{trans}.

15. (Withdrawn) A method for reprogramming of a hairdo (permanent shape) obtained in accordance with the method according to claim 12 into a new permanent shape, wherein

the is hairdo is warmed to a temperature above T'_{trans},

followed by bringing the hair into a new shape, and

followed by fixing the new shape by means of cooling to a temperature below T'_{trans}.

16. (Withdrawn) A method in accordance with claim 12, characterized in that the shape memory polymer possesses a degree of crystallinity of from 3 to 80% and wherein the ratio of the moduli of elasticity below and above T_{trans} is at least 20.

17. (Withdrawn) A method according to claim 12, characterized in that the shape memory polymer is a copolyester urethane.

18. (Withdrawn) A method according to claim 17, characterized in that the shape memory polymer is a reaction product of (a) two different macrodiols, selected among α,ω-dihydroxypolyesters, α,ω-dihydroxyoligoesters, α,ω-dihydroxypolylactones and α,ω-dihydroxyoligolactones, and (b) at least one diisocyanate.

19. (Previously presented) A method for the recovery of a programmed hairdo (permanent shape) obtained by one of the methods according to claim 1, wherein the hairdo in a temporary shape according to claim 3 or in the shape of a hairdo obtained by cold forming, is warmed to a temperature above T_{trans}.

20. (Withdrawn) A cosmetic composition, comprising in a cosmetically suitable medium at least one active agent, selected among compounds which, alone or in combination with other compounds, are capable, after application to hair and carrying out the treatment according to claim 1, to provide a shape memory effect to hairs.

21. (Withdrawn) A cosmetic composition according to claim 20, wherein the active agent comprises a macromer which is cross-linkable to a shape-memory polymer, wherein the cross-linked shape-memory polymer possesses at least one transition temperature T_{trans} and wherein the macromer comprises

a) cross-linkable segments which are cross-linkable by means of chemical bonds, and
b) thermoplastic segments, which are not chemically cross-linkable.

22. (Withdrawn) A cosmetic composition in accordance with claim 20, characterized in that the active agent is a shape memory polymer, which comprises at least one hard

segment with a first transition temperature T'_{trans}, which is crosslinkable by means of physical interactions, wherein the first transition temperature is above room temperature, and at least one soft segment having a second transition temperature T_{trans}, which lies below T'_{trans}.

23. (Withdrawn) A composition in accordance with claim 20 characterized in that at least two active agents are contained, which alone do not show shape memory properties or only weak shape memory properties but which, after combined application according to claim 1, provide the hair with a synergistically increased shape memory effect.

24. (Withdrawn) A composition in accordance with claim 20, characterized in that additionally 0.01 to 25 wt.-% of at least one active agent are contained, selected among hair cosmetics, hair fixatives and hair colorants.

25. (Withdrawn) A cosmetic composition in accordance with claim 20, characterized in that the composition is provided in the form of a lotion, a spray lotion, a cream, a gel, a foam gel, an aerosol spray, a non-aerosol spray, an aerosol foam, a non-aerosol foam, a O/W-emulsion or W/O-emulsion, a macro emulsion or a hair wax.

26. (Withdrawn) A method of treating hair comprising the step of applying to the hair macromers which are cross-linkable to shape-memory polymers, wherein the macromer comprises

a) cross-linkable segments, which are cross-linkable by means of chemical bonds, and

b) thermoplastic segments, which are not chemically cross-linkable,

wherein the shape-memory polymers do possess at least one transition temperature T_{trans}.

27. (Withdrawn) A method of treating hair comprising the step of applying to the hair a physically crosslinkable shape memory polymer, wherein the shape memory polymer

comprises at least one hard segment with a first transition temperature T_{ans}, which is crosslinkable by means of physical interactions, wherein the first transition temperature is above room temperature, and at least one soft segment having a second transition temperature T_{trans}, which lies below T_{trans}.

28. (Previously presented): A method for the recovery of a programmed hairdo (permanent shape) obtained by one of the methods according to claim 1, wherein the hairdo in a temporary shape according to claim 14 or in the shape of a hairdo obtained by cold forming, is warmed to a temperature above T_{trans}.